

Tutorial

Using Semantic MediaWiki in Enterprise Architecture

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Berlin, Germany

About us...

- ArchiXL
 - Independent Dutch Consultancy company
 - Specialised in Enterprise Architecture (EA)
 - Located in Amersfoort
 - Customers mainly from public sector
 - Started using SMW internally for EA repository
- XL&Knowledge (“Excellent knowledge”)
 - Knowledge management label for ArchiXL
 - Knowledge management world is much larger than only EA
 - SMW as knowledge management platform
- Toine Schijvenaars
 - Enterprise architect & managing partner at ArchiXL/XL&Knowledge



Agenda

- 1 Introduction to architectural knowledge(management)
- 2 Semantic wiki for architectural knowledge
- 3 Setting up and maintaining the architecture knowledge model







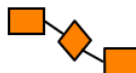
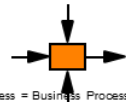

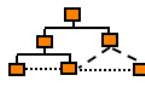

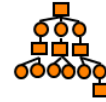
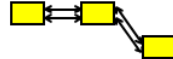
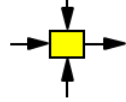
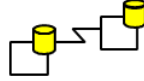
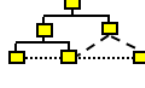

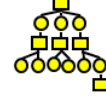


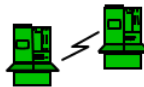
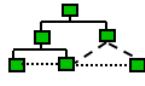
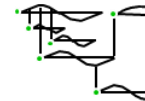
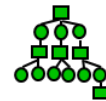






What is Enterprise Architecture

- Enterprise Architecture
 - A formal description of a **enterprise**, or a detailed plan of the **enterprise** at component level, to guide its implementation.
 - The structure of components, their inter-relationships, and the principles and guidelines governing their design and evolution over time.

Why Enterprise Architecture?

- Architecture helps in optimising the service portfolio of an organisation, aligning IT supply to business demand
- Architecture contributes to a healthy project portfolio, ensuring that projects that contribute most to the long term vision will be realised
- Architecture improves the quality of individual solutions, simplifying their development and maintenance en prolonging their life time

The origin: Zachman framework

abstractions perspectives	DATA What	FUNCTION How	NETWORK Where	PEOPLE Who	TIME When	MOTIVATION Why
SCOPE Planner contextual	List of Things - Important to the Business  Entity = Class of Business Thing	List of Processes - the Business Performs  Function = Class of Business Process	List of Locations - in which the Business Operates  Node = Major Business Location	List of Organizations - Important to the Business  People = Class of People and Major Organizations	List of Events - Significant to the Business  Time = Major Business Event	List of Business Goals and Strategies  Ends/Mean=Major Business Goal/Critical Success Factor
ENTERPRISE MODEL Owner conceptual	e.g., Semantic Model  Entity = Business Entity Rel. = Business Relationship	e.g., Business Process Model  Process = Business Process I/O = Business Resources	e.g., Logistics Network  Node = Business Location Link = Business Linkage	e.g., Work Flow Model  People = Organization Unit Work = Work Product	e.g., Master Schedule  Time = Business Event Cycle = Business Cycle	e.g., Business Plan  End = Business Objective Means = Business Strategy
SYSTEM MODEL Designer logical	e.g., Logical Data Model  Entity = Data Entity Rel. = Data Relationship	e.g., Application Architecture  Process = Application Function I/O = User Views	e.g., Distributed System Architecture  Node = IS Function Link = Line Characteristics	e.g., Human Interface Architecture  People = Role Work = Deliverable	e.g., Processing Structure  Time = System Event Cycle = Processing Cycle	e.g., Business Rule Model  End = Structural Assertion Means = Action Assertion
TECHNOLOGY CONSTRAINED MODEL Builder physical	e.g., Physical Data Model  Entity = Tables/Segments/etc. Rel. = Key/Pointer/etc.	e.g., System Design  Process = Computer Function I/O = Data Elements/Sets	e.g., Technical Architecture  Node = Hardware/System Software Link = Line Specifications	e.g., Presentation Architecture  People = User Work = Screen/Device Format	e.g., Control Structure  Time = Execute Cycle = Component Cycle	e.g., Rule Design  End = Condition Means = Action
DETAILED REPRESENTATIONS Subcontractor out-of-context	e.g., Data Definition  Entity = Field Rel. = Address	e.g., Program  Process = Language Statement I/O = Control Block	e.g., Network Architecture  Node = Addresses Link = Protocols	e.g., Security Architecture  People = Identity Work = Job	e.g., Timing Definition  Time = Interrupt Cycle = Machine Cycle	e.g., Rule Specification  End = Sub-condition Means = Step
FUNCTIONING ENTERPRISE	DATA Implementation	FUNCTION Implementation	NETWORK Implementation	ORGANIZATION Implementation	SCHEDULE Implementation	STRATEGY Implementation

The enterprise architect as knowledge worker

- Knowledge work entails gathering, processing, creating, sharing and disseminating knowledge
- 3 phases:
 1. Information:
 - *gathering relevant knowledge and data*
 2. Use:
 - *processing the gathered knowledge*
 - *creating new knowledge*
 3. Result:
 - *sharing and disseminating the result*

(Mackenzie Owen, 2001)

Architectural knowledge is an *asset*

“The major problem with intellectual capital is that it has legs and walks home every day.”

Rus & Lindvall

Advantages of using a semantic wiki

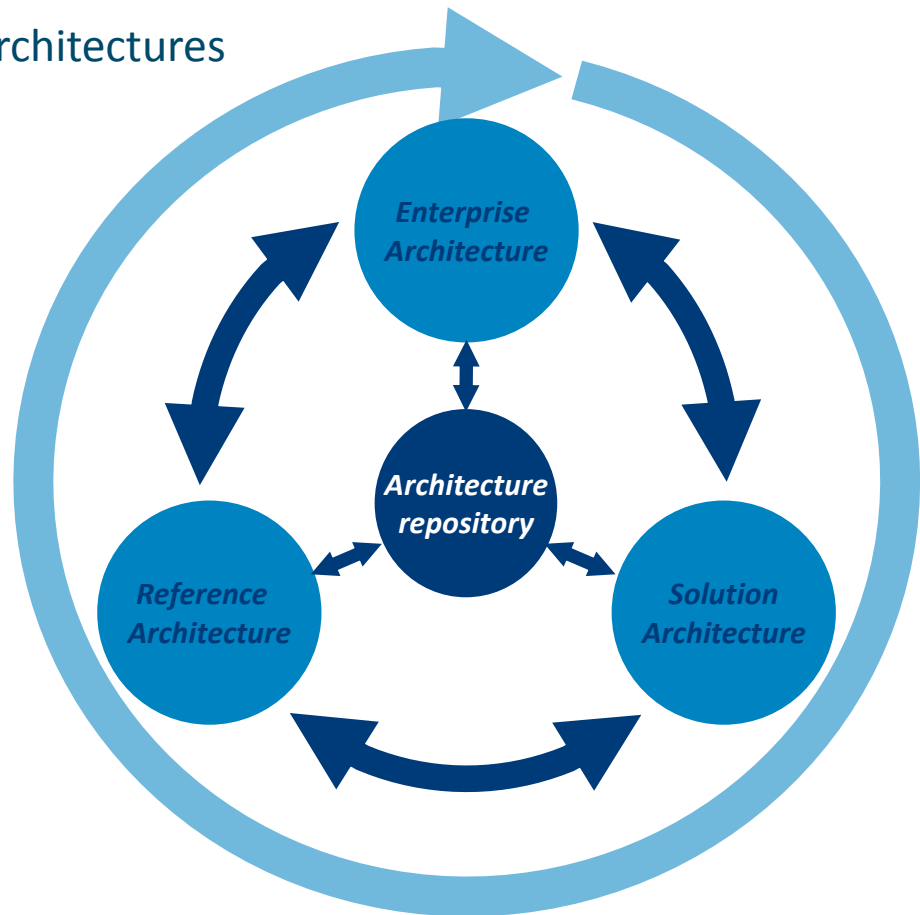
- Open invitation for knowledge sharing
 - Everyone may contribute
 - “Who knows what”?
- Single entry point for architectural knowledge
 - Open platform
 - Integration with other tools possible
- Architecture in context
 - No a-priori constraints on the type of knowledge that can be captured
- Semi-structured
 - Supports structure *and* text
- Dynamic overviews / queries
 - Stakeholder-specific content

Agenda

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- 3 Setting up and maintaining the architecture knowledge model

Semantic (Architecture) Wikis

- E-government
 - Reference architectures
 - Organisation-specific (enterprise) architectures
 - Master data management
- IT
 - ArchiXL IT reference architecture
 - Solution architecture
 - Information model
- But also
 - issue management
 - project management
 - contract management
 - service management



Background: 'e-government'

- Goals (for citizens and businesses):
 - Reduce administrative burdens
 - Better service provision
- Means (for government agencies):
 - Work together
 - Align business processes
 - Use each other's information
- This has huge impact on the enterprise architecture of government agencies!
 - business processes
 - information landscape
 - technology

The NORA architecture family

- Establish processes and systems that ensure interoperability
- Increasing level of specificity (government → domain → organization)
- Main constituents:
 - Architecture principles
 - Architecture models
- Architecture is *the fundamental organization of a system* embodied in its components, their relationships to each other, and to the environment, and the principles guiding its design and evolution (ISO-IEC 42010)
- “Principles are *general rules and guidelines*, intended to be enduring and seldom amended, that inform and support the way in which an organization sets about fulfilling its mission.” (TOGAF)

NORA
*Dutch Government
Reference Architecture*

GEMMA
Municipalities

WILMA
Water control boards

PETRA
Provinces

MARIJ
Civil service

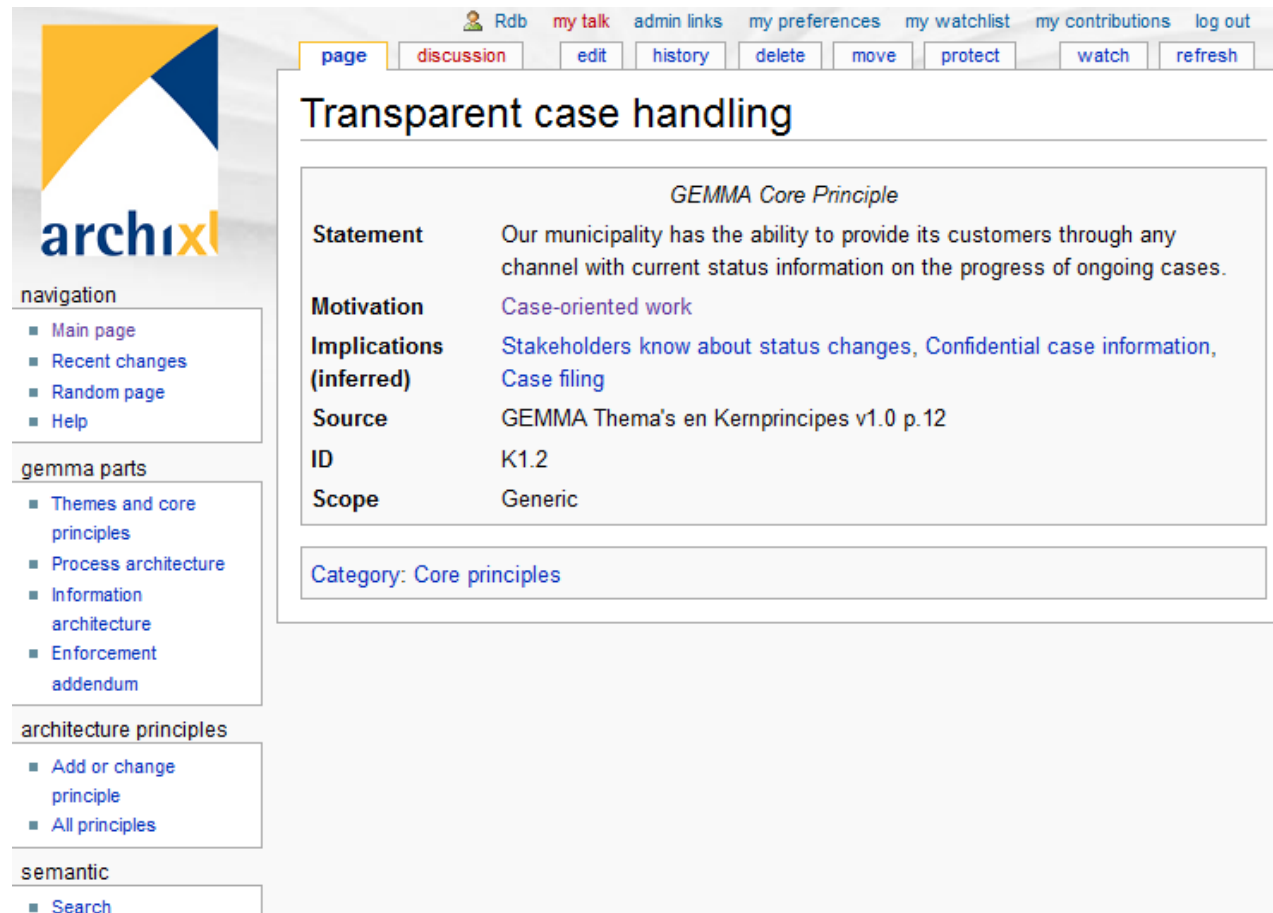
ROSA
Education

Organization-specific Enterprise Architectures

Example architecture principles

- No wrong door:
 - Citizens and businesses can direct their questions to ‘the government’; government offices (re)direct to the appropriate service
- Single request, multiple use of data:
 - Once the government has obtained certain data from a citizen or business, no government agency may ask for the same data again.
- Transparent services:
 - Citizens and businesses are informed about the state of the requested service.

Principle (Wiki page)



The screenshot shows a Wiki page titled "Transparent case handling" on the archixl platform. The page layout includes a top navigation bar with user links (Rdb, my talk, admin links, my preferences, my watchlist, my contributions, log out) and action buttons (page, discussion, edit, history, delete, move, protect, watch, refresh). A left sidebar contains navigation links (Main page, Recent changes, Random page, Help) and categorized sections: "gemma parts" (Themes and core principles, Process architecture, Information architecture, Enforcement addendum), "architecture principles" (Add or change principle, All principles), and "semantic" (Search).

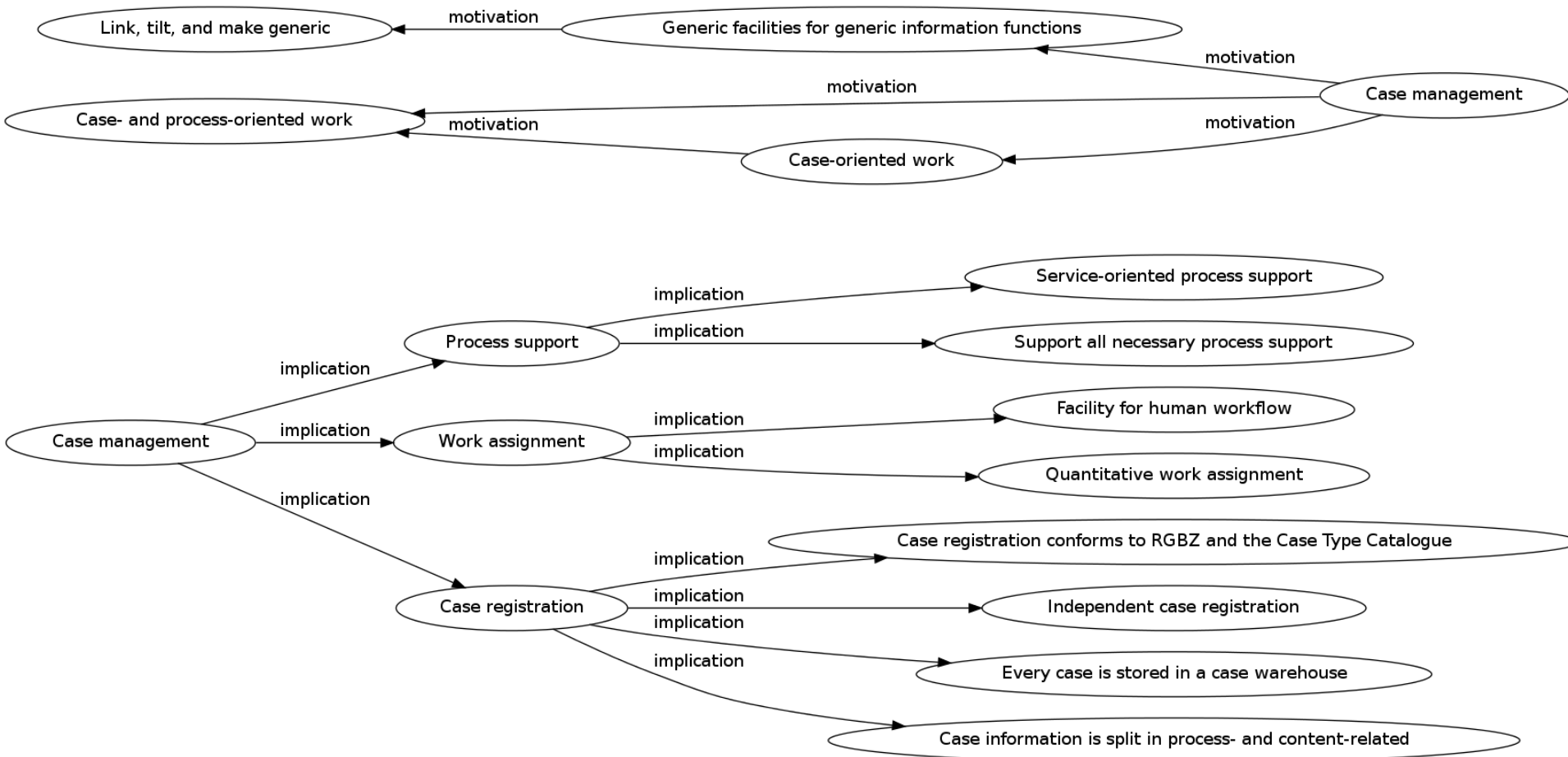
The main content area displays the "Transparent case handling" page, which is categorized as a "GEMMA Core Principle". The page content is structured as follows:

GEMMA Core Principle	
Statement	Our municipality has the ability to provide its customers through any channel with current status information on the progress of ongoing cases.
Motivation	Case-oriented work
Implications (inferred)	Stakeholders know about status changes , Confidential case information , Case filing
Source	GEMMA Thema's en Kernprincipes v1.0 p.12
ID	K1.2
Scope	Generic

Below the table, the category is listed as [Category: Core principles](#).

Example query answered by the wiki:

Case management motivation and implications



ArchiMate model element (Wiki page)

archixl

navigation

- Main page
- Recent changes
- Random page
- Help

search

reference architecture

- Business functions
- Applications
- Application infrastructure
- Technical infrastructure
- Development, support and security

archimate

Rdb my talk admin links my preferences my watchlist my contributions log out

page discussion edit history delete move protect watch refresh

Case handling

Characteristic properties of case-oriented work are:

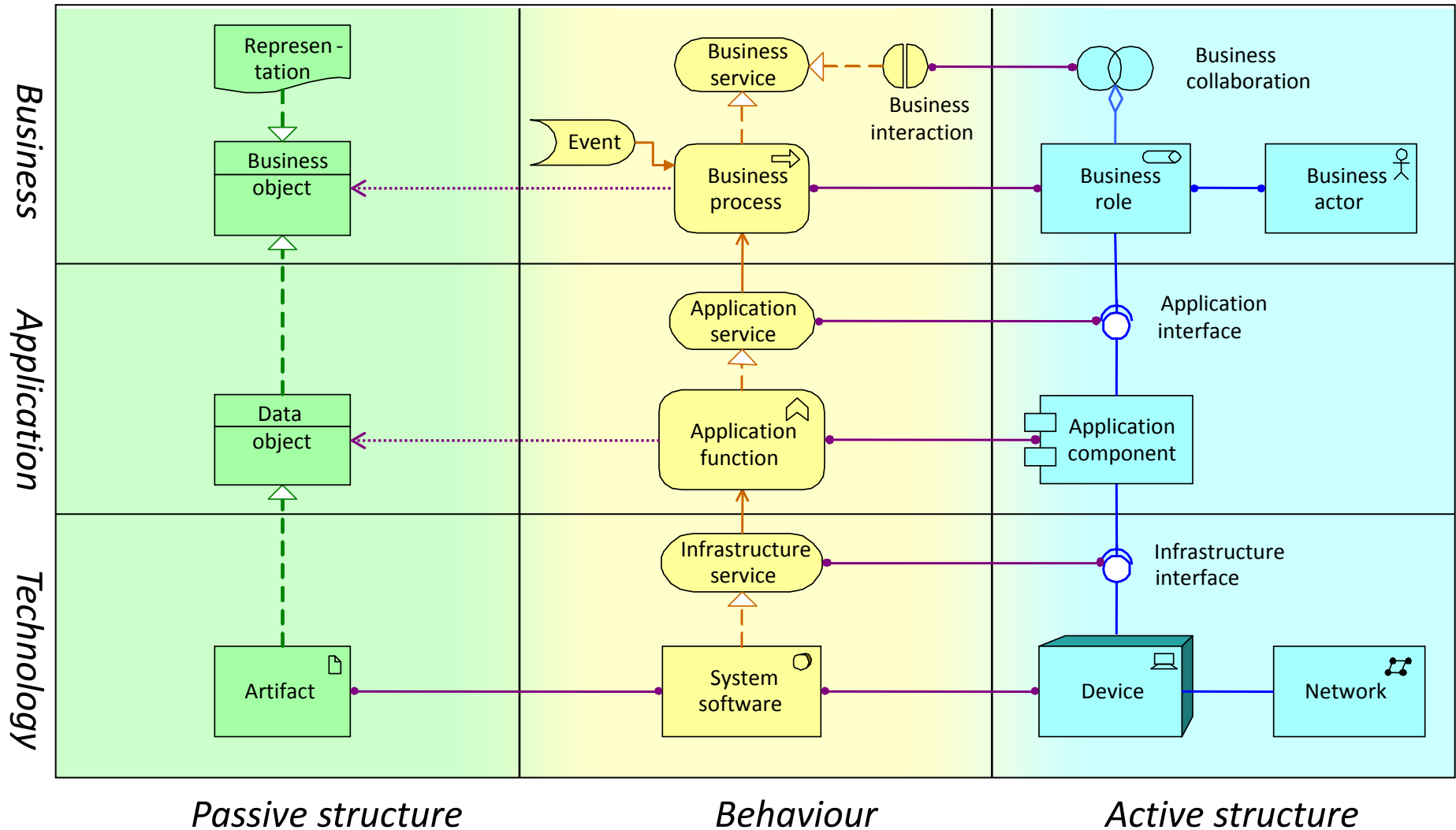
1. *each customer request results in the definition of a case, which is integrally managed, monitored and implemented;*
2. *the customer and the municipality have knowledge of the current status of their ongoing cases;*
3. *municipal service processes are designed and standardized according to the same overall pattern;*
4. *a case is the combination of stakeholder(s), case information, documents, status, results and eventual decisions;*
5. *all information concerning a case is registered under a single identifier.*

(bron: KING)

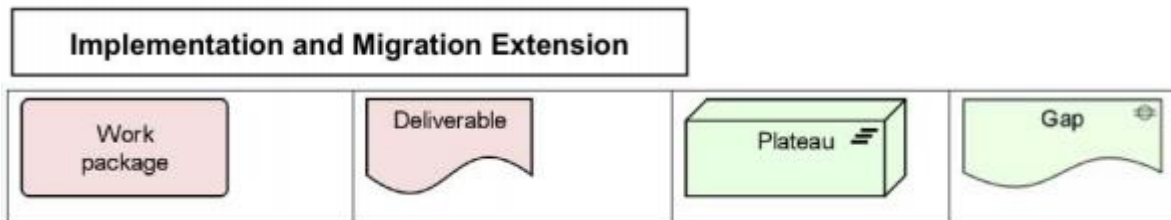
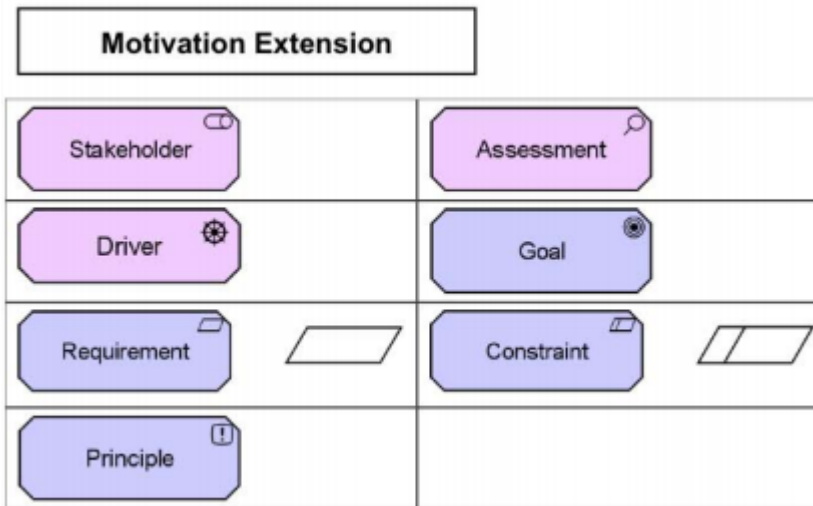
	<i>Infrastructure service</i>
	
Name	Case handling
Description	Provide case-oriented support for processes, which means the case is central rather than the detailed process design
External information	http://www.kinggemeenten.nl/ 
IT reference architecture	Application infrastructure
Specializes	Process control
Is related to	Processes are supported by process control
Is realized by	Case management system

Categories: [Infrastructure services](#) | [Application infrastructure](#)

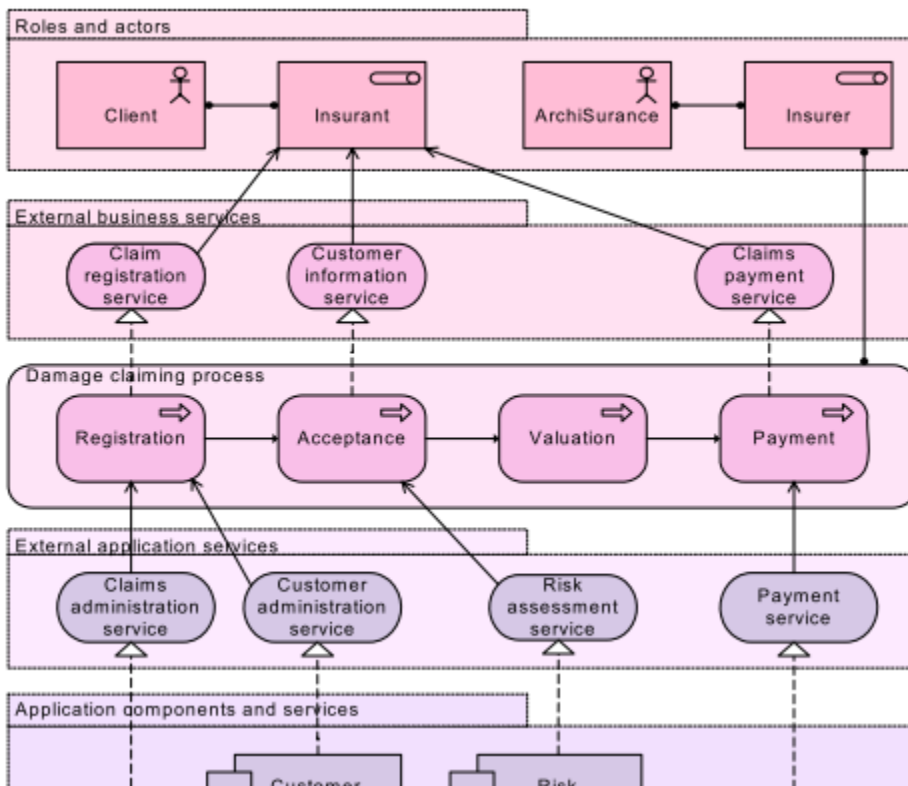
ArchiMate: Overview



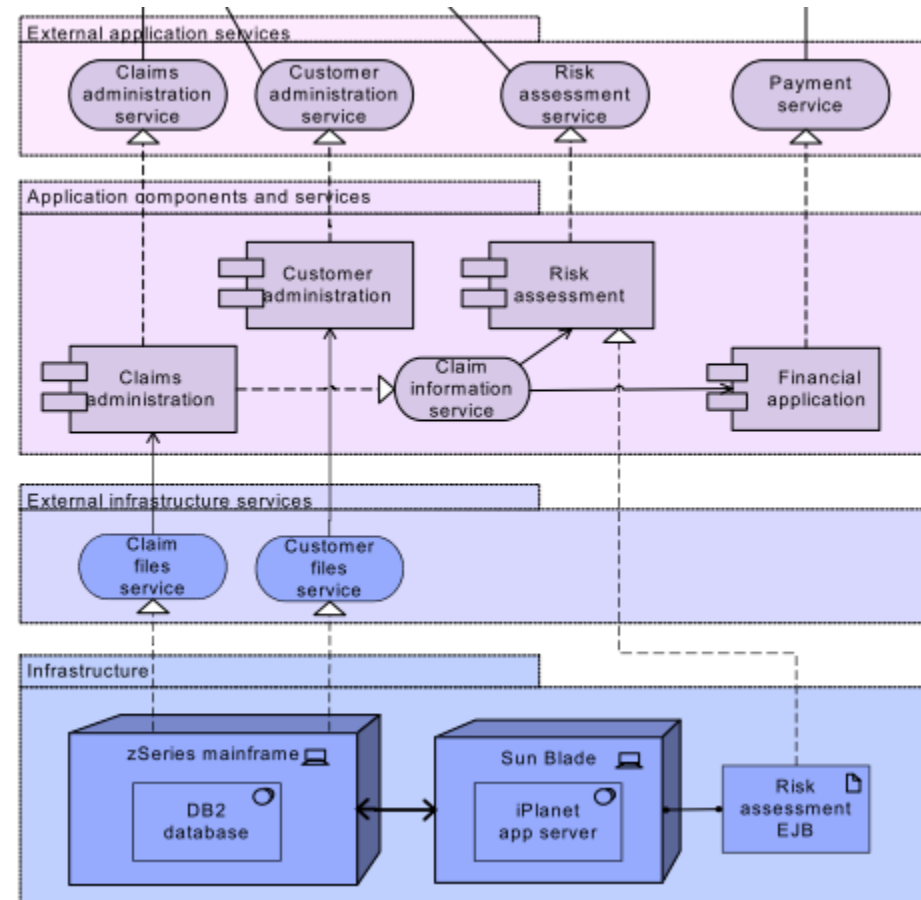
ArchiMate extensions



An ArchiMate model



source: Lankhorst et al., ArchiMate Language Primer




Semantic architecture wiki:

The end user's perspective (the 'reader')

- Facts and relationships, such as
 - Model elements: ArchiMate attributes and relations
 - Architectural statements: motivation and implications; traceability
- Combined structured and unstructured information
- Dynamic overviews
 - Tables
 - Lists
 - Diagrams
 - Relation tables
 - Categories
- Interactive selections
 - Faceted search; dynamic drill-down
 - Semantic search (advanced)

Facts and relationships in GEMMA: Principles, motivation and implication



navigation

- Main page
- Recent changes
- Random page
- Help

gemma parts

- Themes and core principles
- Process architecture
- Information architecture
- Enforcement addendum

architecture principles

- Add or change principle
- All principles

semantic

- Search

Rdb my talk admin links my preferences my watchlist my contributions log out

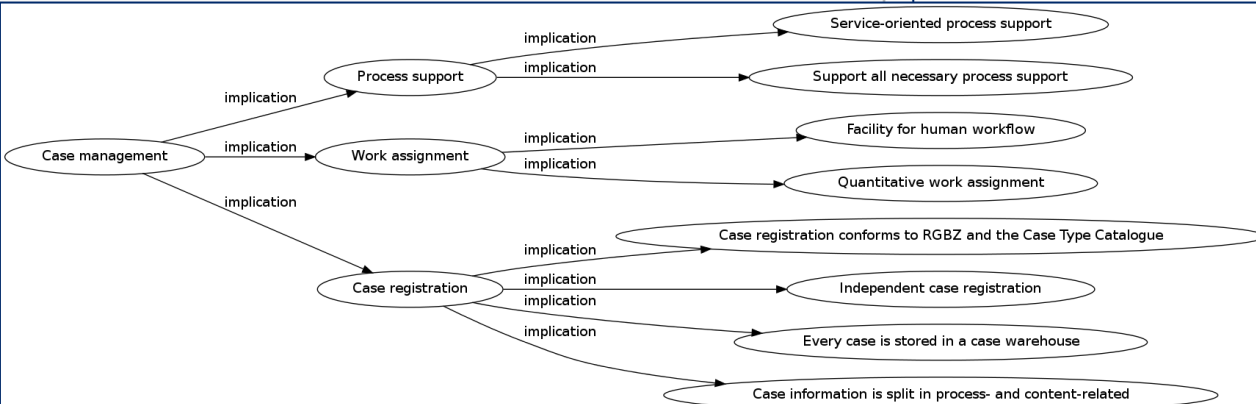
page discussion edit history delete move protect watch refresh

Transparent case handling

GEMMA Core Principle

Statement	Our municipality has the ability to provide its customers through any channel with current status information on the progress of ongoing cases.
Motivation	Case-oriented work
Implications (inferred)	Stakeholders know about status changes, Confidential case information, Case filing
Source	GEMMA Thema's en Kernprincipes v1.0 p.12
ID	K1.2
Scope	Generic

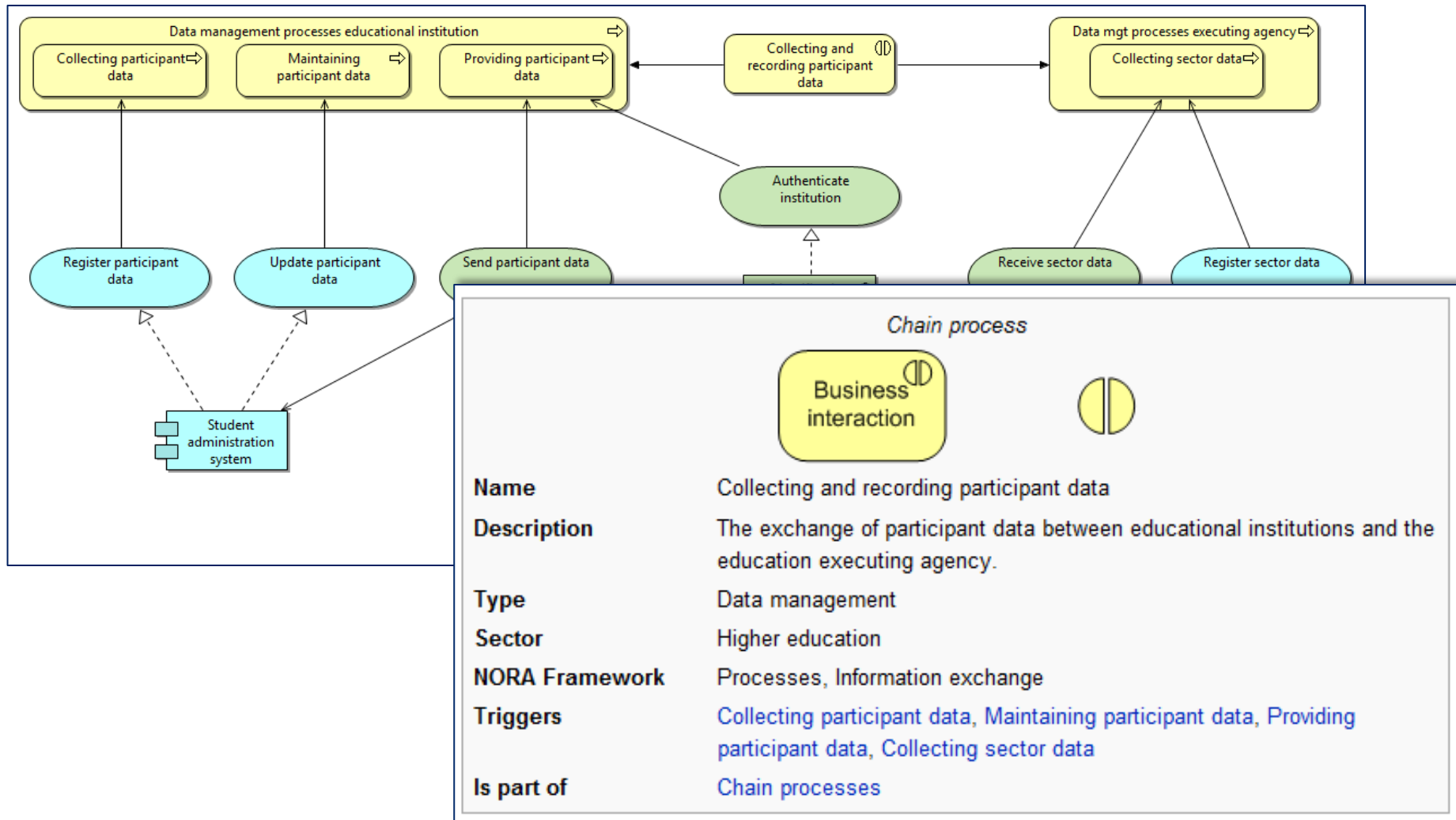
Category: Core prin



```
graph LR; CM([Case management]) -- implication --> PS([Process support]); CM -- implication --> WA([Work assignment]); CM -- implication --> CR([Case registration]); PS -- implication --> SOPS([Service-oriented process support]); PS -- implication --> SNPS([Support all necessary process support]); WA -- implication --> FHW([Facility for human workflow]); WA -- implication --> QWA([Quantitative work assignment]); CR -- implication --> CCRGBZ([Case registration conforms to RGBZ and the Case Type Catalogue]); CR -- implication --> ICIR([Independent case registration]); CR -- implication --> ECW([Every case is stored in a case warehouse]); CR -- implication --> CSICR([Case information is split in process- and content-related]);
```

Facts and relationships in ROSA:

Education Chain Processes as ArchiMate Wiki Pages



Textual information (combined with structured semantics)

The screenshot shows the ArchiXl web interface. The top navigation bar includes links for 'Rdb', 'my talk', 'admin links', 'my preferences', 'my watchlist', 'my contributions', and 'log out'. Below this is a secondary bar with buttons for 'page', 'discussion', 'edit', 'history', 'delete', 'move', 'protect', 'watch', and 'refresh'. The main content area is titled 'Case handling' and contains the following text:

Characteristic properties of case-oriented work are:

1. each customer request results in the definition of a case, which is integrally managed, monitored and implemented;
2. the customer and the municipality have knowledge of the current status of their ongoing cases;
3. municipal service processes are designed and standardized according to the same overall pattern;
4. a case is the combination of stakeholder(s), case information, documents, status, results and eventual decisions;
5. all information concerning a case is registered under a single identifier.

(bron: KING)

On the right side of the page, there is a structured metadata table for 'Infrastructure service':

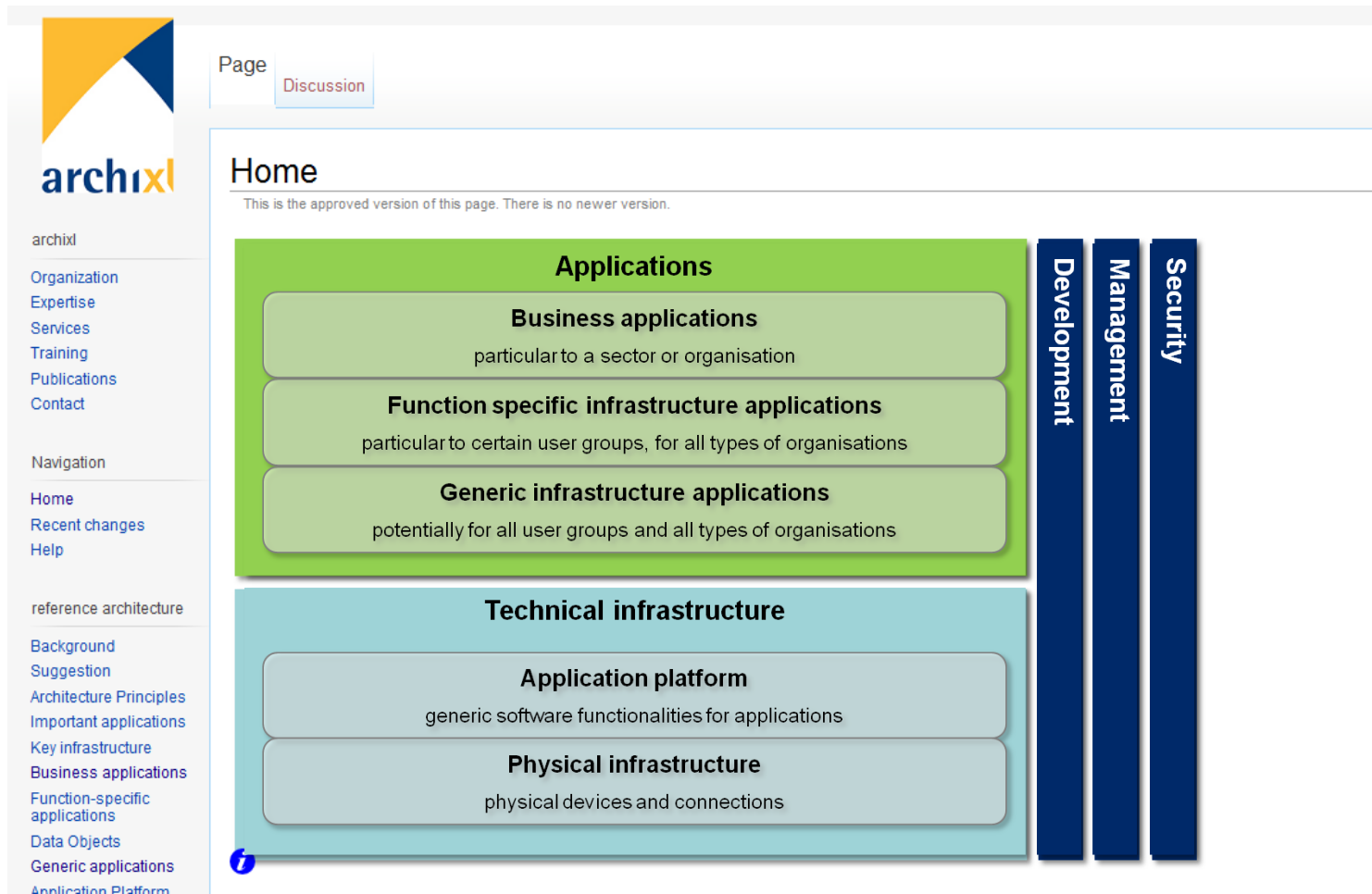
Infrastructure service	
	Infrastructure service
Name	Case handling
Description	Provide case-oriented support for processes, which means the case is central rather than the detailed process design
External information	http://www.kinggemeenten.nl/
IT reference architecture	Application infrastructure
Specializes	Process control
Is related to	Processes are supported by process control
Is realized by	Case management system

At the bottom of the page, there is a category bar: 'Categories: Infrastructure services | Application infrastructure'.

The left sidebar contains the following sections:

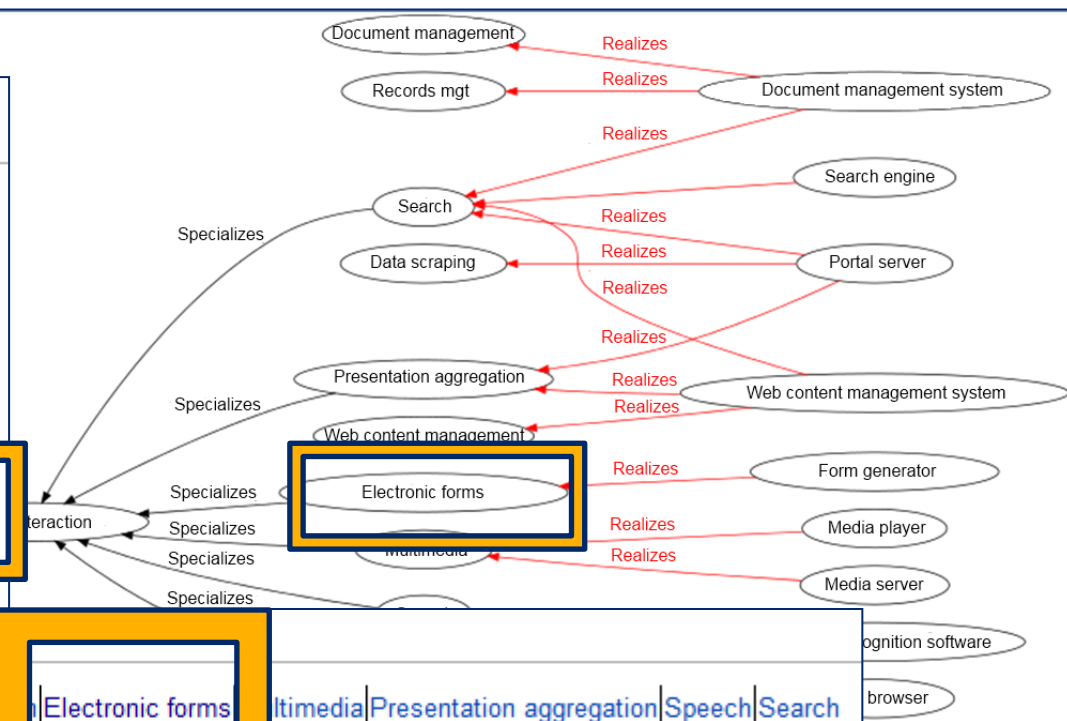
- navigation**
 - Main page
 - Recent changes
 - Random page
 - Help
- search**
 - Go Search
- reference architecture**
 - Business functions
 - Applications
 - Application infrastructure
 - Technical infrastructure
 - Development, support and security
- archimate**

Image: ArchiXL IT Reference architecture



Dynamic overviews

User interaction services		[edit]
Service	Description	
Content presentation	Disseminating content (including documents) to the user, who in a user-friendly way to navigate through. Het ontsluiten van content (inclusief documenten) richting de gebruiker, die hier op een gebruikersvriendelijke wijze doorheen kan	
Electronic forms	Providing forms that can be filled out and submitted electronically.	
Multimedia	Playing and editing audio and video.	



User interaction logical components							
Realizes	Content presentation	Electronic forms	Multimedia	Presentation aggregation	Speech	Search	
Document management system	-	-	-	-	-	X	
Form generator	-	X	-	-	-	-	
Media server	-	-	X	-	-	-	
Media player	-	-	X	-	-	-	
Portal server	-	-	-	X	-	X	
Speech recognition software	-	-	-	-	X	-	
Web browser	X	-	-	-	-	-	
Web content management system	-	-	-	X	-	X	
Search engine	-	-	-	-	-	X	

Dynamic overview: table

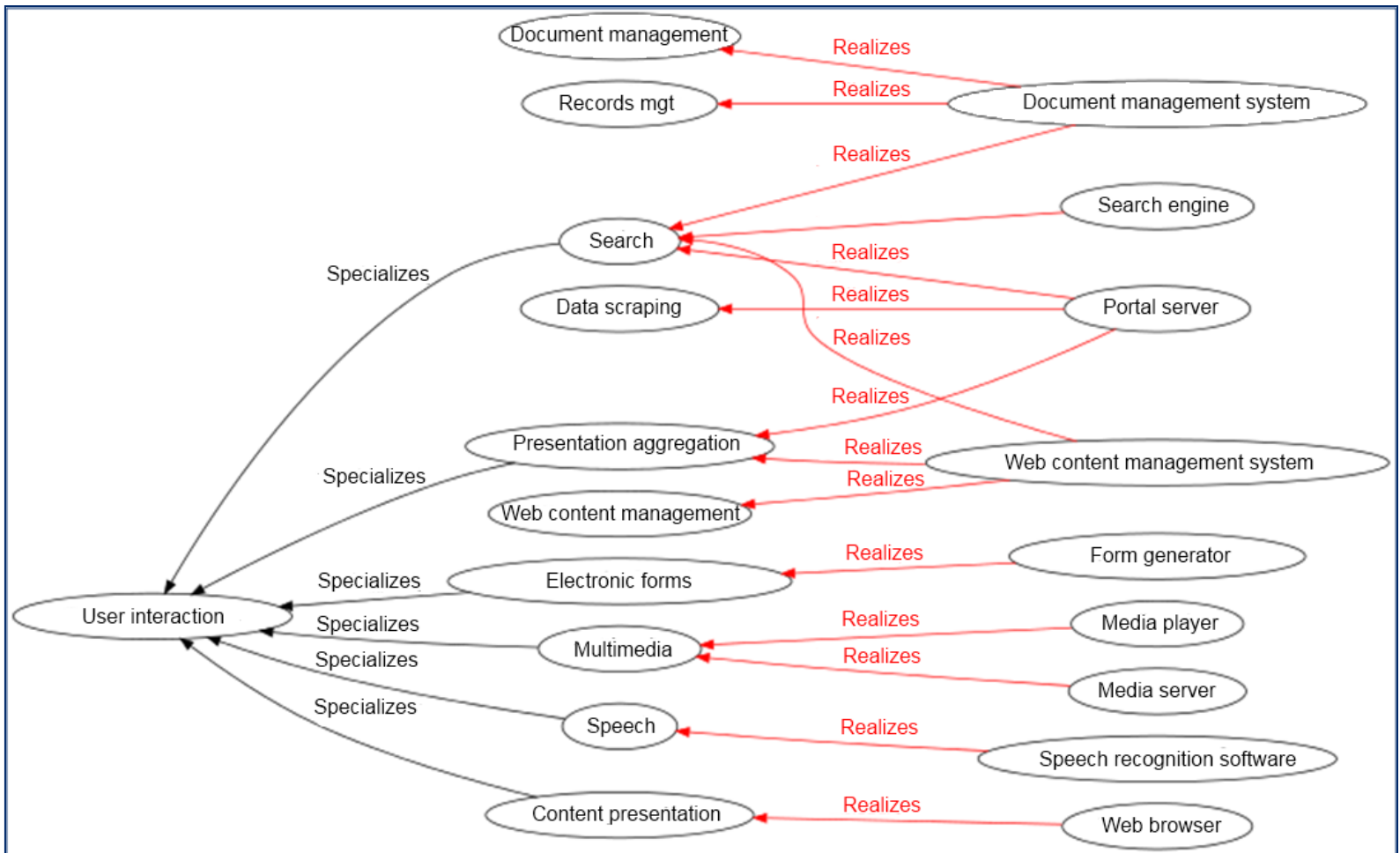
User interaction services [edit]	
Service	Description
Content presentation	Disseminating content (including documents) to the user, who in a user-friendly way to navigate through. Het ontsluiten van content (inclusief documenten) richting de gebruiker, die hier op een gebruikersvriendelijke wijze doorheen kan navigeren.
Electronic forms	Providing forms that can be filled out and submitted electronically.
Multimedia	Playing and editing audio and video.
Presentation aggregation	Compiling a user interface with smaller user interface elements, adapted to the role and preferences of the user (aka portal).
Speech	Recognizing and synthesizing (human) speech.
Search	Searching in all kinds of data, both structured and unstructured (such as web content, email and documents).

Dynamic overview: relation table


User interaction logical components

<i>Realizes</i>	Content presentation	Electronic forms	Multimedia	Presentation aggregation	Speech	Search
Document management system	-	-	-	-	-	X
Form generator	-	X	-	-	-	-
Media server	-	-	X	-	-	-
Media player	-	-	X	-	-	-
Portal server	-	-	-	X	-	X
Speech recognition software	-	-	-	-	X	-
Web browser	X	-	-	-	-	-
Web content management system	-	-	-	X	-	X
Search engine	-	-	-	-	-	X

Dynamic overview: graph



Interactive selections



archixl

Organization
Expertise
Services
Training
Publications
Contact

Navigation

Home
Recent changes
Help

reference architecture

Background
Suggestion
Architecture Principles
Major applications
Key infrastructure

Special pages

Login / Register

OK Zoeken

View details

ArchiMate concepts

Select one or more of the following terms to reduce the number of results.

Under the Category: ArchiMate active concepts (507) · ArchiMate behavior concepts (290) · ArchiMate passive concepts (66)

▼ **IT reference architecture:**
(There are no values for this)

▼ **Supplier:**
AMD (1) · ARAS Security (1) · AVD-ICT (1) · Adobe (1) · Aenova (1) · Apache (9) · ArcSight (1) · Ataccama (4) · Atlassian (2) · Avaya (1) · Axios Systems (1) · Axway (4) · nurse true (1) · Barracuda Networks (4) · Management Vision (1) · Benjamin Pierce (1) · Bentis (1) · Bentley (3) · Berkeley Bridge (1) · BiZZdesign (2) · Borland (1) · C3Group (1) · CECID (1) · CallScripter (1) · Cebecon (1) · Centric (23) · Checkpoint IC (1) · Chip PC (1) · Citrix (5) · Colibra (1) · DHV (1) · Esri (1) · Flamingo (1) · Free Software Foundation (2) · GISKit (2) · GeoTax (1) · Google (1) · GouwIT (1) · Grontmij (1) · HP (4) · IBM (21) · ICIT (1) · ICTU (1) · IDS Scheer (2) · Impactive (1) · INFA (1) · Science (1) · Inpaqt (1) · Interflex (1) · Iron Mountain (1) · JBoss (4) · JCC Software (1) · Kempen Hills (1) · Logius (1) · Loquendo (1) · Lumension (1) · Lumina (1) · MFAS (1) · Mavim (1) · Microsoft (16) · Nagios Enterprises (1) · Nedap (1) · Nedgraphics (4) · Novell (1) · Nuance (1) · OW2 (1) · OpenText (1) · Oracle (24) · Parallels (2) · Pentahoo (1) · PinkRoccade (8) · Plan Consult (1) · Planon (2) · pleio (1) · PostgreSQL GDP (1) · Procura (1) · Progress (2) · Q-Matic (1) · Quark (1) · Quire (1) · Raet (1) · Red Hat (3) · Roxit IT Solutions (1) · SAP (6) · SAS (1) · SDU (1) · SIMgroep (2) · SOA Software (1) · Sendmail.org (1) · Softlution (1) · Soft Tack (1) · Solviteers (1) · Sparx Systems (1) · Stratech (2) · SugarCRM (1) · Symantec (1) · Synaxion Ubidata (1) · TIBCO (1) · Talend (3) · The Kannel Group (1) · The Linux Foundation (1) · Tradelec (1) · Trinicom (1) · Unisys (1) · Unit 4 (1) · VMWare (5) · Vicrea (3) · Wayne Davison (1) · Wikimedia Foundation (1) · XMind (1)

▼ **Abstraction Level:**
Physical (331) · Logical (191)

Choose a category:
ArchiMate concepts (863)
ArchiMate layers (863)
Architecture Principles (58)
Statements (58)

Semantic search

Query

[[Category:System software]] [[Supplier::Microsoft]]

[Add sorting condition]

Format as: Broad table (default)

Other options

limit: headers:
The maximum number of results to return *Display the headers/properties*

link: intro:
Show values as links *The text to display before there are any*

default:
The text to display if there are no query results

Additional data to display

Previous **Results 1– 13** Next (20 | 50 | 100 | 250 | 500)

<input type="checkbox"/>	<input type="checkbox"/> Specializes
ASP.NET	Web application server
Microsoft .NET	Application server Web application server Compiler Virtuele machine
Microsoft Application Virtualization	Application virtualization platform
Microsoft Hyper-V	Hypervisor
Microsoft Internet Information Server	HTTP server
Microsoft MSMQ	Message Oriented Middleware
Microsoft Remote Desktop Services	Desktop virtualization platform
Microsoft Robocopy	File synchronization tool
Microsoft SQL Server	Database management system Data mining tool OLAP tool
Microsoft SyncToy	File synchronization tool
Microsoft Virtual Server	Server virtualization platform
Microsoft Windows	Operating system
Microsoft Windows Virtual PC	Client virtualization platform

Previous **Results 1– 13** Next (20 | 50 | 100 | 250 | 500)

Semantic architecture wiki:

The architect's perspective (the 'contributor')

- Input forms
 - Forms for meaningful codification of e.g. ArchiMate concepts and architecture principles
 - Automatic form assignment for 'red links' based on relations
- Standard wiki markup for free text
- ImageMap editor
 - Annotate images with links to wiki pages
- Special forms, such as
 - Import reference architecture knowledge
 - Project Start Architecture generator
- Integration with other tools
 - show and link model images from other tools in the wiki
 - batch import model definitions from other tools

Input forms

Edit Statement: Case-oriented work

Type:	<input type="text" value="GEMMA Core principle"/>
Version:	<input type="text" value="1"/>
Statement:	<input type="text" value="Our municipality treats all customer requests, except for requests for information, in a case-oriented way."/>
Motivation:	<input type="text" value="Case and process-oriented work"/>
<i>derived motivation</i>	no derived motivation
Motivation (text):	<input type="text"/>
Implication:	<input type="text"/>
<i>derived implications</i>	Transparent case handling, Connect, Case management
Implication (text):	<input type="text"/>

Special forms

Special pages

IctuPsa

Assess which of the following conditions

- ☐ Does the project impact in organi
- ☐ Does the project affect a service
- ☐ Does the project affect the busine
- ☐ Does the project have implication
- ☐ Does the project affect the inform
- ☐ Does the project have implication
- ☐ Does the project in technical com
- ☐ Does the project have implication
- ☐ Does the project in technical netv

Key Terms

- ☐ Security
- ☐ Web technology
- ☐ Multimedia
- ☐ Together
- ☐ Documents
- ☐ Data
- ☐ Technical

Identify key questions and standards

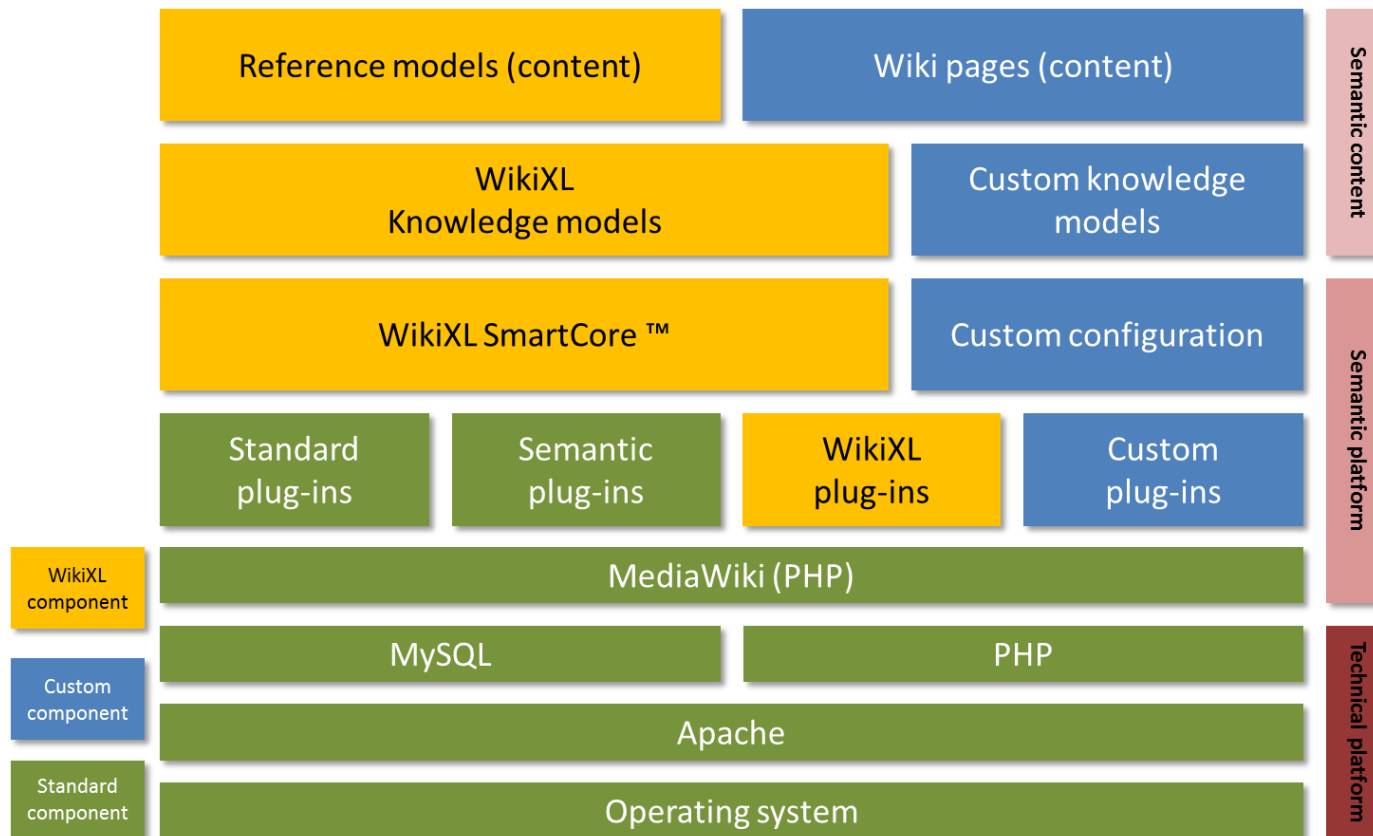
speciale pagina

GEMMA Import

- Zakenbeheer (3)
 - Procesondersteuning (2)
 - Ondersteuning alle benodigde procesondersteuning (5)
 - **Procesondersteuning biedt mogelijkheid tot rollback** (*importeer*) ☒
 - **Procesondersteuning houdt rekening met communicatiefouten tussen systemen** (*importeer*) ☒
 - **Procesorkestratie impliceert koppelen van documentstromen aan processen** (*importeer*) ☒
 - **Signalering van overschrijding behandeltermijnen** (*importeer*) ☒
 - **Voortgang van processen te volgen tot op processtap en klant op status** (*importeer*) ☒
 - Servicegerichte procesondersteuning (2)
 - **Geautomatiseerde stappen van een proces worden geïmplementeerd via procesorkestratie** (*importeer*) ☒
 - **Procesorkestratie kan taken uitbesteden aan andere organisaties** (*importeer*) ☒
 - Werktoewijzing (2)
 - Voorziening voor human workflow (3)
 - **Een omgeving voor geautomatiseerde werktoewijzing** (*importeer*) ☒
 - **Human workflow gekoppeld aan een generieke taak wordt vervangen door een generieke oplossing** (*importeer*) ☒
 - **Human workflow gekoppeld aan sectorale taken koppelt status terug aan zaakregistratie** (*importeer*) ☒
 - **Werktoewijzing op getalsniveau** (2)

XL&Knowledge: WikiXL platform

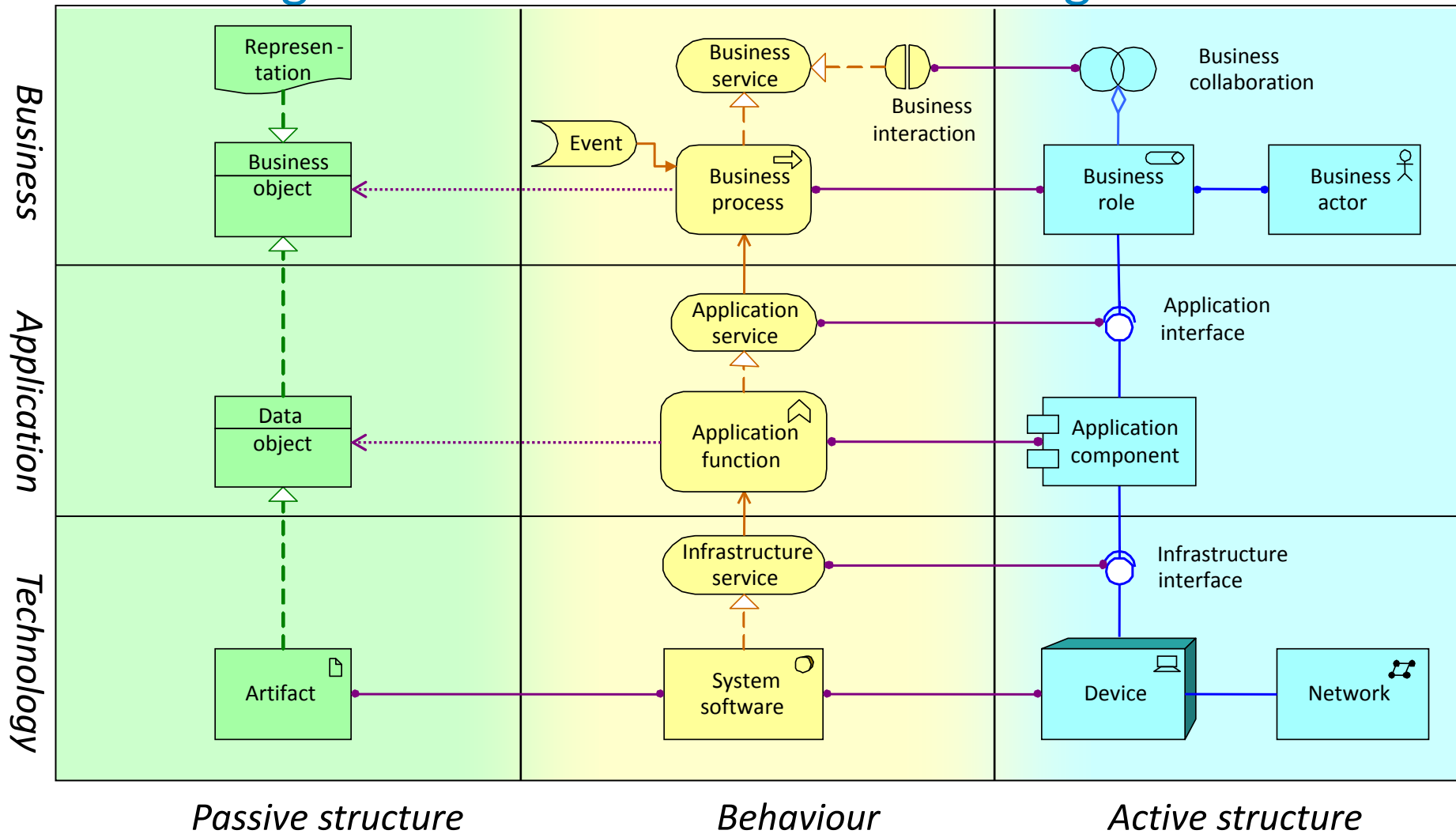
- New label for our knowledge management advise en solutions
- Main platform: WikiXL (Semantic MediaWiki implementation)



Agenda

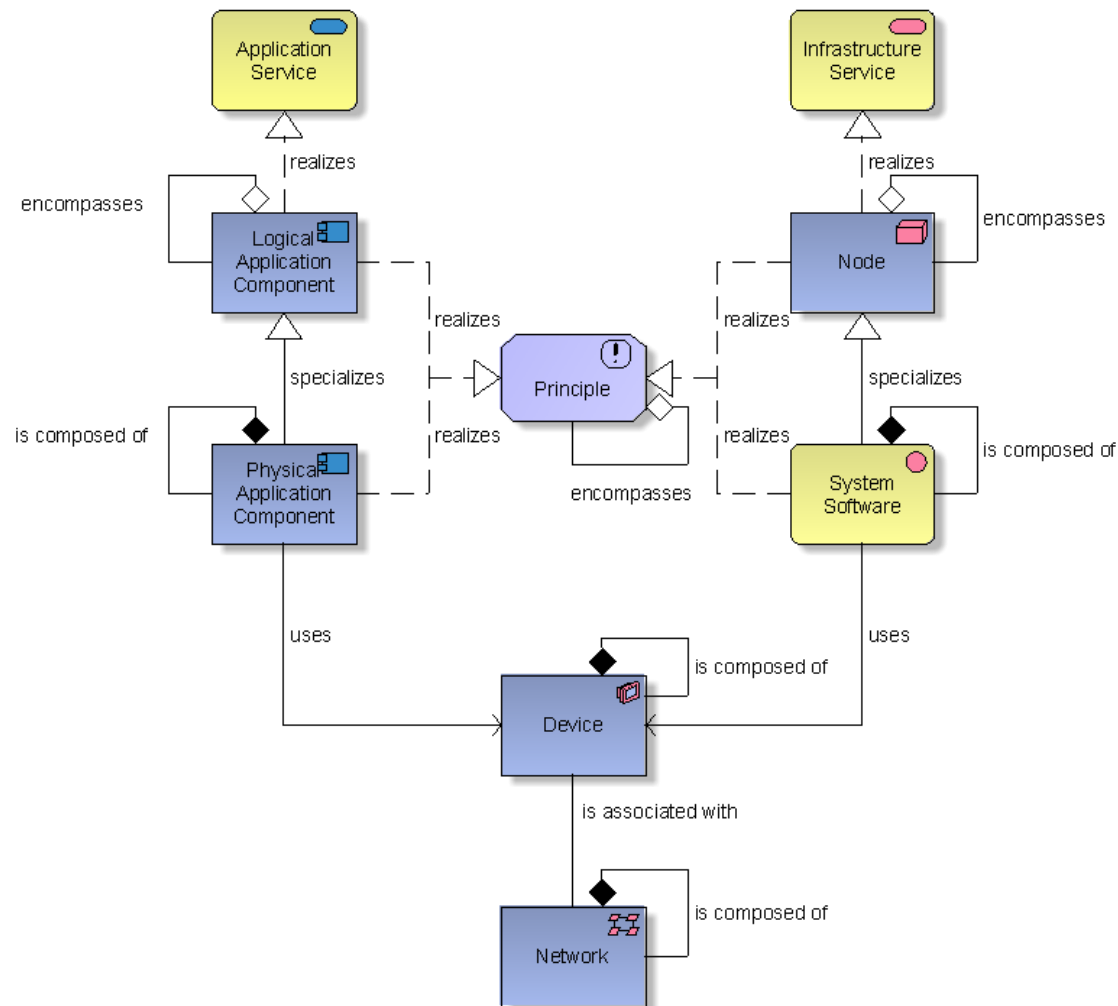
- 1 Introduction to architectural knowledge(management)
- 2 Semantic wiki for architectural knowledge
- 3 Setting up and maintaining the architecture knowledge model

Knowledge model - Determine what to register



Knowledge model of SSC Holland (based on real life case)

- Shared service centre
- Cutting costs by efficiency and sharing resources
- Four municipalities
- Shared infrastructure
- Shared application portfolio
- Separate business processes



Most important components of the knowledge model

- Templates
 - ‘Classes’
- Properties
 - Attributes and relationships
- Forms
 - For data entry and changes
- Categories
 - ‘Object types’

Page Schema's

Edit schema

Additional XML:

☒ Form

Name:

☒ Users must enter the page name before getting to the form (default)

Title of form for new pages:

Title of form for existing pages:

Define form buttons and inputs (will be enabled all if not selected any):

Free text label:

☒ Free text input ☒ Summary input ☒ Minor edit input ☒ Watch input ☒ Save input ☒ Preview input ☒ Changes input ☒ Cancel input

Template

Name:

☐ Allow multiple instances of this template

☒ Details for template in form

☒ Internal property

Field

Name: Display label:

☐ This field can hold a list of values

☐ Display this field always ☐ Display if not empty ☐ Hide

☒ Semantic property

Name (leave blank to set to field name): Type:

If you want this property to only be allowed to have certain values, enter the list of allowed values, separated by commas (if a value contains a comma, replace it with "\,"):

☒ Form input

Input type (leave blank to set to default):

Enter the text that will be printed before the field:

Enter field description:

☐ Show description as pop-up tooltip

Do it yourselves!

- Step 1: Create your model
- Step 2: Query the model



Step 1 - Create the model:

How to start?

- We'll divide the group people into 6 groups of nine people.
- The model is composed of 9 element types.
- Every group is divided in 3 subgroups (1A, 1B, 1C ,2A, 2B, 2C etc..) who implement 3 element types/categories each.
- Every category, form and template has it's own category prefix: *Gr1_*, *Gr2_* etc... E.g. *Category:Gr1_Nodes*
- Every property has it's own category prefix: *Gr1a_*, *Gr2a_* etc... E.g. *Category:Gr1a_description*

Log in

- Go to: <https://test.wikixl.nl/wiki/smwcon2>
- Enter the username / password (from the handout)

86.83.127.151 Talk for this IP address [Log in / create account](#)

Special page Search

Log in / create account

Log in

Don't have an account? [Create an account](#).

You must have cookies enabled to log in to SMWCon2.

Username:

Password:

☐ Remember my login on this browser (for a maximum of 180 days)

[Forgotten your login details?](#)

[Privacy policy](#) [About SMWCon2](#) [Disclaimers](#)

Step 1 - Create the model:

Choose the right categories

- Each Category page contains the definition, properties and relations of the ArchiMate element we want to use.
- Look in the hand out for your category

Sub group	Category	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
A	1. Application services	X	X	X	X	X	X
	2. Logical application components	X	X	X	X	X	X
	3. Physical application components	X	X	X	X	X	X
B	4. Infrastructure services	X	X	X	X	X	X
	5. Nodes	X	X	X	X	X	X
	6. System software	X	X	X	X	X	X
C	7. Devices	X	X	X	X	X	X
	8. Networks	X	X	X	X	X	X
	9. Principles	X	X	X	X	X	X

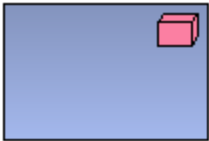
Category:Gr1 Nodes

Step 1 - Create the model:

Example: Nodes

Category **Discussion** Read Edit View history Save as Search

Category:Gr1 Nodes



A node is defined as a computational resource upon which artifacts may be stored or d ion.

Sample data for data entry Nodes

Properties	
Name	Type
Description	Text
External information	URL

Relations	
Name	Target
Realizes	Application services
Realizes	Principles
Encompasses	Nodes

Delete
Protect
Watch
Edit schema
Generate pages
Refresh

Step 1 - Create the model: Edit Schema

Edit schema

Additional XML:

☒ Form

Name:

☒ Users must enter the page name before getting to the form (default)

Title of form for new pages:

Title of form for existing pages:

Define form buttons and inputs (will be enabled all if not selected any):

Free text label:

☒ Free text input ☒ Summary input ☒ Minor edit input ☒ Watch input ☒ Save input ☒ Preview input ☒ Changes input ☒ Cancel input

Template

Name:

☐ Allow multiple instances of this template

☐ Details for template in form

☐ Internal property

Field

Name:

Display label:

☐ This field can hold a list of values

☒ Display this field always ☐ Display if not empty ☐ Hide

☒ Semantic property

Name (leave blank to set to field name):


Type:

If you want this property to only be allowed to have certain values, enter the list of allowed values, separated by commas (if a value contains a comma, replace it with "\","):

Step 1 - Create the model: Generate schema

Category **Discussion** Read Edit View history Save as Search

Category:Gr1 Nodes



A node is defined as a computational resource upon which artifacts may be stored or deployed

Sample data for data entry Nodes

Properties	
Name	Type
Description	Text
External information	URL

Relations	
Name	Target
Realizes	Application services
Realizes	Principles
Encompasses	Nodes

Page schema [\[Expand\]](#)

- Delete
- Protect
- Watch
- Edit schema
- Generate pages**
- Refresh

Step 1 - Create the model:

Generate pages

Category **Discussion** [Read](#) [Edit](#) [View history](#)

Generate pages

Generate the following pages, based on this category's schema:

- ☒ [Property:Description](#)
- ☒ [Property:External information](#)
- ☒ [Property:Realizes](#)
- ☒ [Property:Realizes principle](#)
- ☒ [Property:Encompasses](#)
- ☒ [Template:Node](#)
- ☒ [Form:Node](#)

Generate pages

[Privacy policy](#) [About SMWCon1](#) [Disclaimers](#)

Step 1 - Create the model:

Start the data entry

- Go to the created form, e.g.
 - Form: Gr1_Node

Page **Discussion** [Read](#) [Edit](#) [Edit source](#) [View history](#) [Save as](#)

Existing node: Application virtualisation platform

Description:
Name of this node

Supports the virtualization of applications

External information:
URI for external info

http://en.wikipedia.org/wiki/Application_virtualization

Realizes:
Realizes one or more infrastructure services

Application virtualization

Realizes principle:
Realizes one or more principles

All software should be virtualized. The standard for the application virtualisation platform is Microsoft Application Virtualization

Encompasses:
Encompasses one or more Nodes

Free text:

Summary:

☐ This is a minor edit ☐ Watch this page

[Save page](#) [Show preview](#) [Show changes](#) [Cancel](#)

Step 1 - Create the model:

Spoiler alert!

- Use **unique** names for forms, templates and properties, e.g.
 - Form: gr1_node
 - Template: gr1_node
 - Attribute: gr1a_description

Step 2 - Query the model: How to start?

- Go to: <https://test.wikixl.nl/wiki/smwcon2>
- Login with the same username password
- Try to make queries according to the assignment on the page:
- http://test.wikixl.nl/wiki/smwcon1/index.php/Query_assignments
- Use Special:Ask to formulate the query

Step 2 - Query the model: Use Special:Ask

Special page

Search

Semantic search

Categories

Attributes

Query

Additional data to display
(add one property name per line)

[Add sorting condition]

Output format

Format as:

Other options

limit:
The maximum number of results to return

sort:
Property to sort the query by

order: ☐ descending ☐ desc ☐ asc
☐ ascending ☐ rand ☐ random
Order of the query sort

offset:
The offset of the first result

headers:
Display the headers/property names

mainlabel:
The label to give to the main page name

link:
Show values as links

searchlabel:
Text for continuing the search (default is «... further results»)

intro:
The text to display before the query results, if there are any

outro:
The text to display after the query results, if there are any

default:
The text to display if there are no query results

class:
An additional CSS class to set for the table

[Find results](#) [Hide query](#) [Show embed code](#) [Querying help](#)

Step 2 - Query the model:

Example: Ask query

Special page Search

Semantic search

Query	Additional data to display (add one property name per line)
<pre>[[Category:Nodes]]</pre>	<pre>?Description ?Realizes</pre>

[\[Add sorting condition\]](#)

Format as:

Other options

limit: <input type="text"/> <i>The maximum number of results to return</i>	sort: <input type="text"/> <i>Property to sort the query by</i>	order: <input type="checkbox"/> descending <input type="checkbox"/> desc <input type="checkbox"/> asc <input type="checkbox"/> ascending <input type="checkbox"/> rand <input type="checkbox"/> random <i>Order of the query sort</i>
offset: <input type="text"/> <i>The offset of the first result</i>	headers: <input type="text" value="show"/> <i>Display the headers/property names</i>	mainlabel: <input type="text"/> <i>The label to give to the main page name</i>
link: <input type="text" value="all"/> <i>Show values as links</i>	searchlabel: <input type="text"/> <i>Text for continuing the search (default is «... further results»)</i>	intro: <input type="text"/> <i>The text to display before the query results, if there are any</i>
outro: <input type="text"/> <i>The text to display after the query results, if there are any</i>	default: <input type="text"/> <i>The text to display if there are no query results</i>	class: <input type="text" value="sortable wikitable smwtable"/> <i>An additional CSS class to set for the table</i>

Step 2 - Query the model:

Example: Results

[Find results](#) [Hide query](#) [Show embed code](#) [Querying help](#)

[Previous](#) **Results 1– 20** [Next](#) (20 | 50 | 100 | 250 | 500)

	Description	Realizes
Application server	Ondersteunt het uitvoeren van softwarecomponenten op een transactionele, veilige en schaalbare wijze.	Transaction management
Application virtualisation platform	Ondersteunt het virtualiseren van applicaties	Application virtualization
B2B Gateway	Ondersteunt bericht-gebaseerde integratie met externe partijen.	Partner integration
Backup software	Software die het maken en beheren van backups ondersteunt	Backup
Copier	Een apparaat dat een document kan vermenigvuldigen.	Reproduction
Cordless phone	Een telefoon die gebruik maakt van een draadloos netwerk op één lokatie.	Phone
Database management system	Ondersteunt het beheren van gestructureerde gegevens.	Database
Desktop virtualisation platform	Ondersteunt het gebruik van een desktop die zich op een server bevindt	Desktop virtualization
Direct-attached storage	Een apparaat dat gegevens kan opslaan en die direct is aangesloten op de computer.	Local storage
Directory server	Een hiërarchisch opslagmechanisme van gebruikersgegevens.	Directory
Fax	Een apparaat dat in staat is om een document in te scannen en te versturen alsook te ontvangen en af te drukken over een telefoonlijn.	Reproduction
Firewall	Filtert netwerkcommunicatie om bedreigingen tegen te gaan.	Zone security
HTTP server	Omgeving die content ontsluit naar eindgebruiker.	Content retrieval
Hardware load balancer	Een system dat werk verdeelt over verschillende systemen.	Netwerk load balancing
Host access tool	Ondersteunt het ontsluiten van host (mainframe) toepassingen.	Data scraping
Hub	Een apparaat dat netwerken kan verbinden op OSI laag 1.	Network routing
Hypervisor	Ondersteunt het uitvoeren van meerdere besturingssystemen op een fysieke machine.	Machine virtualization
Interactive voice response system	Een system dat het telefonisch geven van opdrachten ondersteunt.	Call
Intrusion detection system	Een system dat controleert of er geen kwaadaardige activiteit op het netwerk of andere systemen plaats vindt.	Intrusion detection and prevention
Intrusion prevention system	Een system dat controleert of er geen kwaadaardige activiteit op het netwerk of andere systemen plaats vindt en dit zonodig blokkeert.	Intrusion detection and prevention

[Previous](#) **Results 1– 20** [Next](#) (20 | 50 | 100 | 250 | 500)

Step 2 - Query the model:

Example: Query statement

Special page

Semantic search

[\[Edit query\]](#) [Hide embed code](#)

To embed this query inline into a wiki page use the code below.

```
{{#ask: [[Category:Nodes]]
|?#
|?Description
|?Realizes
|format=broadtable
|headers=show
|link=all
|class=sortable wikipable smwtable
|offset=
|limit=
}}
```

Do it yourselves!

- Query assignments
 - Q1: A unnumbered list of all application services and their description
 - Q2: A table of all nodes and the infrastructures they realize
 - Q3: Count the total number of nodes
 - Q4: A table with Nodes which realize an Infrastructure service called *Central storage*
 - Q5: A graph of the logical application component *CAD system* and its relations with physical applications and application services
 - Q6: Which ArchiMate elements are realized by the principle *All software should be virtualized*
 - Q7: Which ArchiMate elements are NOT realized by the principle *All software should be virtualized*

Wrap up

- What we've seen today
 - Introduction to architectural knowledge management
 - Semantic wiki for architectural knowledge
 - Setting up and maintaining the architecture knowledge model
- Questions? Remarks? Want to share your thoughts?
 - Right here, right now...
 - ... or contact me:



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